

Table 1
Stage-Storage - DRY POND
6171 Hazeldean Road

Description	Elev	Incr. Elev	End Area	Average Area	Volume	Cumulative Volume
	(m)	(m)	(m2)	(m2)	(m3)	(m3)
Active Storage						
Top of Pond Elev	116.20	0.30	2811.80	2715	814	5287
Emergency Spill Elev	115.90	2.20	2617.52	2033	4472	4472
Bottom of Drypond	113.70	0.00	1448.18	0	0	0
Permanent Pool - Main Cell						
Normal Water Level (NWL)	113.70	0.00	0	0	0	0
Slope change (5:1)	113.70	0.00	0	0	0	0
Bottom of Main Cell	113.70	0.00	0	0	0	0
Sediment Forebay						
Normal Water Level (NWL)	113.70	0.00	0	0	0	0
Top of forebay berm	113.70	0.00	0	0	0	0
Slope change	113.70	0.00	0.0	0	0	0
Bottom of sediment forebay	113.70	0.00	0.0	0	0	0
Maximum Active Storage =						5,287
Permanent Storage (Below NWL) =						0
Total Pond Storage (Active and Permanent) =						5,287

Stage-Storage Curve of SWM Facility - DRY POND

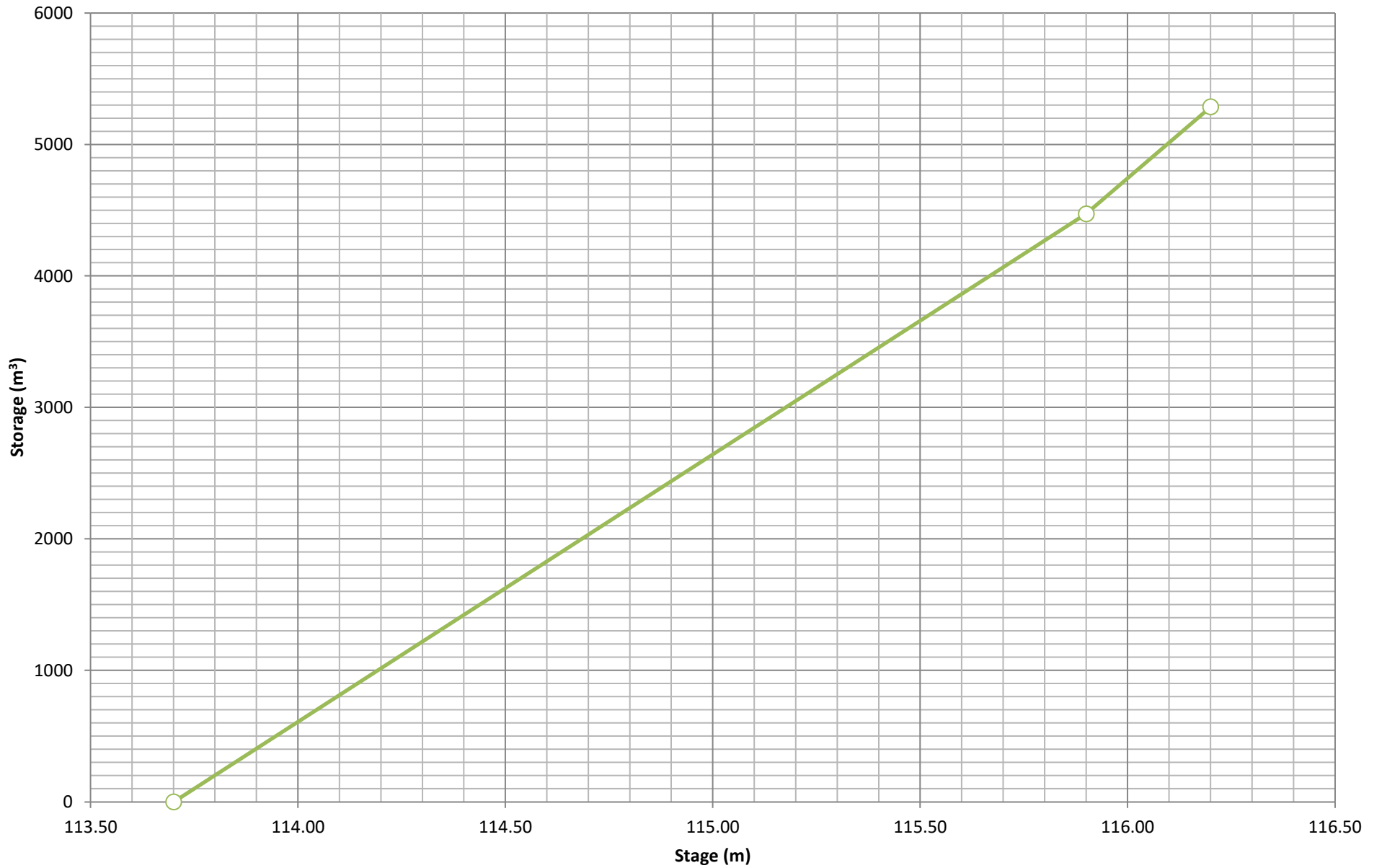


Table 2
Storage-Outflow Data for SWM Facility - DRY POND

6014	100-year Storm Volume (12-hr SCS Storm)
113.70	100-year Storm Elev. (12hr SCS Storm)
5320	100-year Storm Volume (6hr Chicago Storm)
113.70	100-year Storm Elev. (6hr Chicago Storm)
3195	5-year Storm Volume
115.27	5-year Storm Elev.
2,172	2-year Storm Volume
114.77	2-year Storm Elev.
693	15mm EXT DET Storm Volume (3hr Chicago)
114.04	15mm EXT Storm Elev.

Quality Control 1		Quantity Control 1		Emergency Overflow	
Vertical Circular Orifice		Vertical Circular Orifice		Broad-Crested Weir (Rect)	
Dia (mm):	80	Dia (mm):	150	Length (m)	3.0
				Height (m)	0.30
Area (mm2):	5,027	Area (mm2):	17,671		
Coeff. C:	0.257	Coeff. C:	0.61	Coeff. C:	1.837
Orifice Inv:	113.70 m	Orifice Inv:	114.00 m	Weir Inv:	115.90 m
Orifice Cen:	113.74 m	Orifice Cen:	114.075 m		

WSE Elev (m)	Comments	Quantity Volume (Note 1) (m3)	Head (m)	Orifice 1 Flow (m3/sec)	Head (m)	Orifice 2 Flow (m3/sec)	Head, H (m)	Outflow (m3/sec)	Total Flow (m3/sec)	Storage (ha.m)
116.20	Top - Pond	5287	2.50	0.009	2.20	0.071	0.30	0.906	0.9854	0.529
116.10		5015	2.40	0.009	2.10	0.069	0.20	0.493	0.5710	0.502
116.00		4744	2.30	0.009	2.00	0.068	0.10	0.174	0.2505	0.474
115.90	Emerg Spill	4472	2.20	0.008	1.90	0.066			0.0743	0.447
115.80		4269	2.10	0.008	1.80	0.064			0.0724	0.427
115.70		4066	2.00	0.008	1.70	0.062			0.0703	0.407
115.60		3862	1.90	0.008	1.60	0.060			0.0683	0.386
115.50		3659	1.80	0.008	1.50	0.058			0.0662	0.366
115.40		3456	1.70	0.007	1.40	0.056			0.0640	0.346
115.30		3253	1.60	0.007	1.30	0.054			0.0617	0.325
115.20		3049	1.50	0.007	1.20	0.052			0.0593	0.305
115.10		2846	1.40	0.007	1.10	0.050			0.0568	0.285
115.00		2643	1.30	0.007	1.00	0.048			0.0543	0.264
114.90		2439	1.20	0.006	0.90	0.045			0.0516	0.244
114.80		2236	1.10	0.006	0.80	0.043			0.0487	0.224
114.70		2033	1.00	0.006	0.70	0.040			0.0457	0.203
114.60		1830	0.90	0.005	0.60	0.037			0.0424	0.183
114.50		1626	0.80	0.005	0.50	0.034			0.0389	0.163
114.40		1423	0.70	0.005	0.40	0.030			0.0350	0.142
114.30		1220	0.60	0.004	0.30	0.026			0.0306	0.122
114.20		1016	0.50	0.004	0.20	0.021			0.0254	0.102
114.10		813	0.40	0.004	0.10	0.015			0.0187	0.081
114.00		610	0.30	0.003					0.0031	0.061
113.90		407	0.20	0.003					0.0026	0.041
113.80		203	0.10	0.002					0.0018	0.020
113.70	Bottom of Dry Pond									

NOTES:

- 1) Quantity Storage values based on pond geometry and stage-storage data at 0.10m increments
- 2) Top of Pond = 116.20 m
- 3) WSE Interval = 0.10 m

Storage-Outflow Curves for SWM Facility - Dry Pond

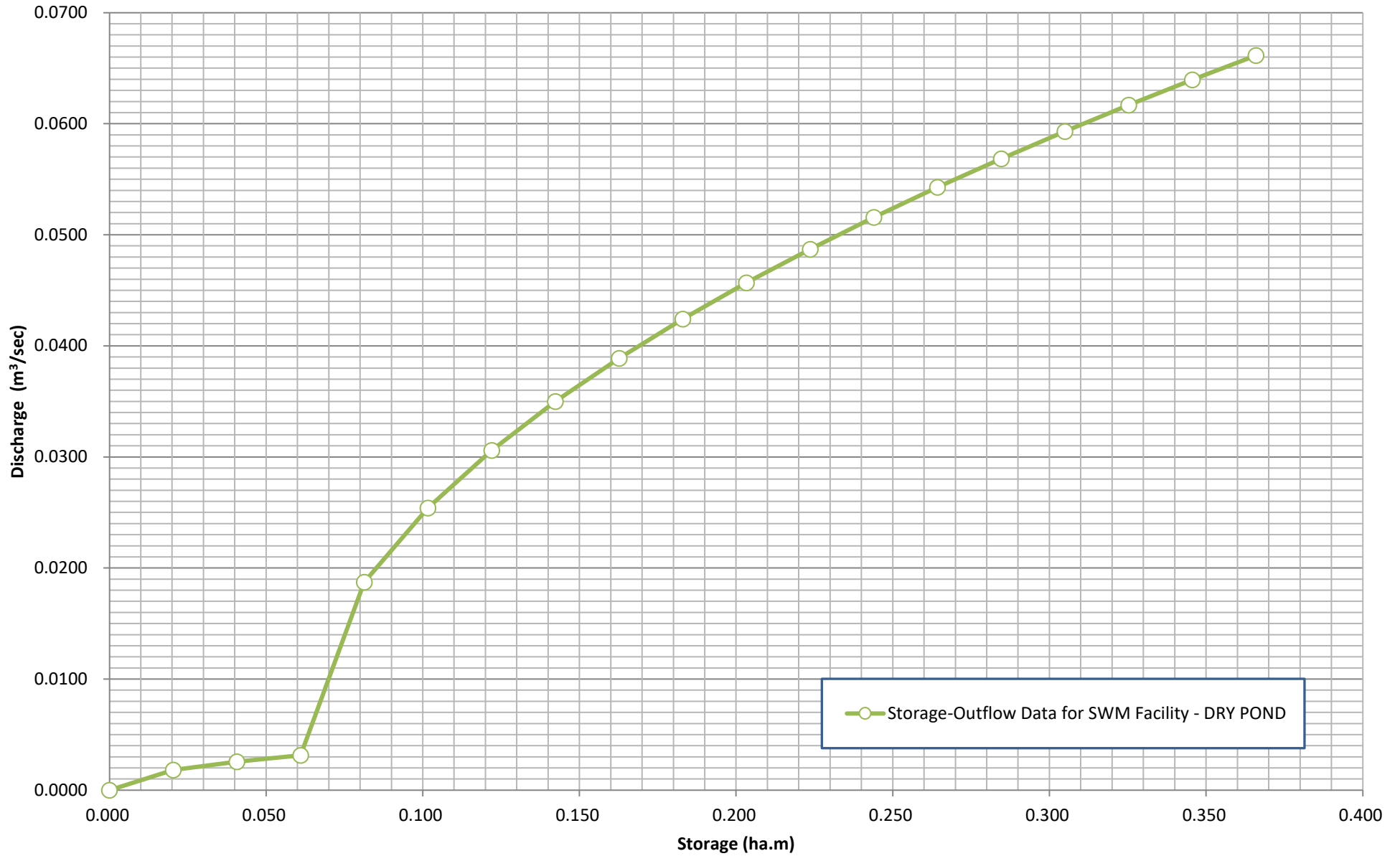


Table 3**Area-Depth Info for DRY POND**

Elev (m)	Depth Above NWL (m)	End Area (m²)	Comments
116.20	2.50	2,812	Top of Pond Elev
115.90	2.20	2,618	Emergency Spill Elev
113.70		1,448	Bottom of Drypond
Slope coefficient from the area-depth linear regression, C2 =			540.2
Intercept from the area-depth linear regression, C3 =			1446.1
<i>Notes</i> C2, C3 based on area, depth ordinates from NWL (bottom) to Top of Pond			

Table 4
Storage-Outflow Data for SWM Facility - DRYPOND

Permanent Pool Elev (NWL) =	113.70
Pond Area at NWL (m2) =	1,448
Volume at NWL (m3) =	
ED Control Orifice Dia (mm) =	80
ED Control Orifice Area (m2) =	0.005027
ED Control Orifice Invert Elev (m) =	113.70
ED Control Centroid Elev (m) =	113.74
ED Orifice Discharge Coefficient =	0.257
C2 =	540
C3 =	1,446

No Permant Pool. This is the bottom of the Dry Pond

Discharge Coeff for IPEX LMF-80

Slope coefficient from the area-depth linear regression
Intercept from the area-depth linear regression

WSE Elev (m)	Active Storage Above NWL			Drawdown Time (hours)		Outflow (m3/sec)	Comments
	VOLUME (m3)	AREA (m2)	DEPTH (m)	HOURS	DAYS		
116.20	5,287	2,812	2.50	120.22	5.01	0.985	Top - Pond
116.10	5,015	2,747	2.40	116.68	4.86	0.571	
116.00	4,744	2,682	2.30	113.14	4.71	0.250	
115.90	4,472	2,618	2.20	109.59	4.57	0.074	Emerg Spill
115.80	4,269	2,564	2.10	106.03	4.42	0.072	
115.70	4,066	2,511	2.00	102.46	4.27	0.070	
115.60	3,862	2,458	1.90	98.88	4.12	0.068	
115.50	3,659	2,405	1.80	95.28	3.97	0.066	
115.40	3,456	2,352	1.70	91.66	3.82	0.064	
115.30	3,253	2,299	1.60	88.02	3.67	0.062	
115.20	3,049	2,245	1.50	84.35	3.51	0.059	
115.10	2,846	2,192	1.40	80.64	3.36	0.057	
115.00	2,643	2,139	1.30	76.89	3.20	0.054	
114.90	2,439	2,086	1.20	73.09	3.05	0.052	
114.80	2,236	2,033	1.10	69.22	2.88	0.049	
114.70	2,033	1,980	1.00	65.29	2.72	0.046	
114.60	1,830	1,927	0.90	61.26	2.55	0.042	
114.50	1,626	1,873	0.80	57.11	2.38	0.039	
114.40	1,423	1,820	0.70	52.82	2.20	0.035	
114.30	1,220	1,767	0.60	48.35	2.01	0.031	
114.20	1,016	1,714	0.50	43.63	1.82	0.025	
114.10	813	1,661	0.40	38.57	1.61	0.019	
114.00	610	1,608	0.30	33.01	1.38	0.003	
113.90	407	1,554	0.20	26.63	1.11	0.003	
113.80	203	1,501	0.10	18.61	0.78	0.002	
113.70		1,448					Bottom of Dry Pond

NOTES:

- 2) Top of Pond = 116.20 m
- 3) WSE Interval = 0.10 m

$$t = \frac{0.66 C_2 h^{1.5} + 2 C_3 h^{0.5}}{2.75 A_o}$$

where:

- t = Drawdown time (seconds)
- C2 = Slope coefficient from the area-depth linear regression
- C3 = Intercept from the area-depth linear regression
- Ao = Cross-sectional area of the orifice (m2)
- h = Maximum water Elevation above the orifice

Equation 4.11 Drawdown Time.
(Page 4-58 MOE Stormwater Management
Planning and Design Manual)